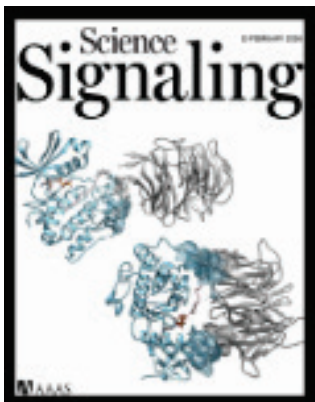


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Featured Publication

Zhenbo Tu, PhD; Liza Quintana, MD; and Tony Karnoub, PhD,
Published in *Science Signaling*



Stabilization of IQGAP1 by the mTORC2 component PRR5 mediates mitogenic LINC01133-to-ERK signaling in triple-negative breast cancer. Tu Z, Moses L, Hu Y, Sapkota S, Quintana LM, Guerrero L, Bell GW, Karnoub AE. *Sci Signal.* 2026 Feb 10;19(924): eadr4063.

Tu, Quintana, Karnoub et al. found that the long non-coding RNA LINC01133 promoted triple-negative breast cancer (TNBC) cell growth by activating AKT signaling via the mTORC2 component PRR5. However, inhibiting AKT was insufficient in suppressing TNBC growth because PRR5 triggered a compensatory, parallel pathway that activated ERK signaling via the adaptor protein IQGAP1. Simultaneous inhibition of both AKT and ERK signaling, or suppressing PRR5, proved effective in suppressing TNBC cell growth suggesting that combining AKT and ERK inhibitors, or PRR5-targeted therapeutics, might prove effective in clinical management of TNBC.

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Publications

- Rai A, Iatrou A, Arzeta IV, Bartlett AL, Banahan J, Desai V, Pantano L, Castanho I, Yeganeh PN, Ploumakis A, Wang S, de Amaral AA, Kalavros N, Nagalakshmi SU, Tsvetkov P, Berretta S, Solomon IH, Hide W, Vlachos IS, Slack FJ, Ozdemir R, Sui SH, Daskalakis NP, Mavrikaki M. [Aging-related Transcriptomic Changes with Spatial Resolution in the Human Prefrontal Cortex](#). *bioRxiv* [Preprint]. 2026 Jan 12:2026.01.12.698703. doi: 10.64898/2026.01.12.698703. PMID: 41648412; PMCID: PMC12871360.
- Cheng X, Qian C, Holdridge E, Ananda G, Jiang T, Zhang Y, Ni J, Xie S, Gu H, Ji R, Ivanova EV, Nucci MR, Wang Z, Chen K, Kochupurakkal B, Freeman GJ, Shapiro GI, Liu J, Konstantinopoulos PA, Matulonis U, Zhao JJ. [Targeting FGFR signaling overcomes therapeutic resistance and immune evasion in oncogenic PIK3CA-driven serous-like endometrial cancer](#). *bioRxiv* [Preprint]. 2026 Feb 17:2026.02.16.706009. doi: 10.64898/2026.02.16.706009. PMID: 41756964; PMCID: PMC12934813.
- Sharma AE, Wyvekens N, Neville G, Parra-Herrán C, Hornick JL, Fletcher CDM, Nucci MR. [Malignant vascular neoplasms of the distal female genital tract: a series of 19 cases emphasizing unusual features and diagnostic challenges](#). *Histopathology*. 2026 May;88(6):1142-1153. doi: 10.1111/his.70094. Epub 2026 Jan 28. PMID: 41607084.
- Williams JF, Glomski K, Ulbright TM, Hanley KZ, Iczkowski KA, Acosta AM, Nucci MR, Oliva E, Hirsch MS. [SOX2 Is the Most Sensitive Biomarker in Testicular and Gynecologic Embryonic-type Neuroectodermal Tumors \(ENT\) Based on a Comprehensive Evaluation of Biomarker Expression](#). *Am J Surg Pathol*. 2026 Jan 1;50(1):21-30. doi: 10.1097/PAS.0000000000002466. Epub 2025 Sep 10. PMID: 40922405.
- Hecht JL, Bellegarde S, Modest AM, Shanker SA. [Stage 2 Basal Plate Myometrial Fibers in Delivered Placentas: Frequent Placenta Retention but Rarely Indicative of Clinical Placenta Accreta Spectrum](#). *Pediatr Dev Pathol*. 2026 Mar-Apr;29(2):120-127. doi: 10.1177/10935266251406042. Epub 2025 Dec 18. PMID: 41410307.
- Wang L, Jou D, Patel R, Malvar G, Germansky K, Hecht JL, Vyas M. [Abnormal Nuclear Membranous Staining Pattern by MLH1 Immunohistochemistry in Endometrial Cancer: A Diagnostic Pitfall and Clone-dependent Artifact](#). *Int J Gynecol Pathol*. 2026 Mar 1;45(2):129-134. doi: 10.1097/PGP.0000000000001125. Epub 2025 Jul 28. PMID: 40758747.
- Wang L, Sardella BR, Aronson EK, Liu Z, Li X, Wulf GM, Heng YJ. [Simultaneous inhibition of PARP/AKT to intercept nascent BRCA1/2mut breast tumors](#). *NPJ Breast Cancer*. 2026 Jan 16;12(1):27. doi: 10.1038/s41523-026-00892-6. PMID: 41545354; PMCID: PMC12920871.

Department of Pathology

Publications

- Wang S. [Extracellular vesicle delivery of myristoylated Cas9 highlights chromatin accessibility as an efficacy barrier in prostate cancer](#). *Mol Ther*. 2026 Jan 7;34(1):16-18. doi: 10.1016/j.ymthe.2025.11.037. Epub 2025 Dec 8. PMID: 41365293; PMCID: PMC12925767.
- Guleria I, Connelly-Smith LS, Bapat A, Klein M, Alkhateeb H, Jacob EK, Mahanta S, Anandappa AJ, Cui W, Reich-Slotky R, Celluzzi C, Spitzer TR. [Chimerism and a framework for clinical practice: A report from the Cellular Therapies Section Coordinating Committee \(CTSCC\) of Association for Advancement of Blood and Biotherapies \(AABB\)](#). *Transfusion*. 2026 Jan 28. doi: 10.1111/trf.70095. Epub ahead of print. PMID: 41603138.
- Hsiao JC, Warui DM, Kwon JJ, Dreishpoon MB, Bick NR, Blue-Lahom T, Root DE, Booker SJ, Tsvetkov P. [Deep Mutational Scanning of FDX1 Identifies Key Structural Determinants of Lipoylation and Cuproptosis](#). *Nat Commun*. 2025 Dec 21;17(1):1112. doi: 10.1038/s41467-025-67869-0. PMID: 41423452; PMCID: PMC12855868.
- Patidar GK, Khatiwada B, Narayan S, Goel R, Nair AR, Das S, Sato T, O'Brien K, AlMozain N; Wikipedia Subgroup of the ISBT [Clinical Transfusion Working Party](#). [Transfusion knowledge online: A Wikipedia deep dive](#). *Vox Sang*. 2026 Feb 10. doi: 10.1111/vox.70216. Epub ahead of print. PMID: 41667143.
- Huang Y, Truelson KA, Stewart IA, O'Doherty GA, Kirby JE. [Enhanced activity of apramycin and apramycin-based combinations against Mycobacteroides abscessus](#). *J Antimicrob Chemother*. 2026 Jan 6;81(1):dkaf433. doi: 10.1093/jac/dkaf433. PMID: 41313250; PMCID: PMC12802941.
- Uy MTJ, Kirmaier A, Rudtner LM, Pine A, Kirby JE. [Poloxamer dilution as an on-demand alternative to agar dilution-based antimicrobial susceptibility testing](#). *J Clin Microbiol*. 2026 Apr 8;64(4):e0182225. doi: 10.1128/jcm.01822-25. Epub 2026 Mar 5. PMID: 41784364; PMCID: PMC13059702.
- Kirby JE, Arnaout R. [What's not to learn? AI meets parasitology](#). *J Clin Microbiol*. 2026 Jan 14;64(1):e0145125. doi: 10.1128/jcm.01451-25. Epub 2025 Dec 8. PMID: 41358779; PMCID: PMC12802280.
- Kirby JE, Arnaout R. [Why are we doing this alone? A collaborative framework for LDT development and validation](#). *J Clin Microbiol*. 2026 Apr 8;64(4):e0186725. doi: 10.1128/jcm.01867-25. Epub 2026 Mar 19. PMID: 41854436; PMCID: PMC13059807.
- Rai A, Iatrou A, Arzeta IV, Bartlett AL, Banahan J, Desai V, Pantano L, Castanho I, Yeganeh PN, Ploumaki A, Wang S, de Amaral AA, Kalavros N, Nagalakshmi SU, Tsvetkov P, Berretta S, Solomon IH, Hide W, Vlachos IS, Slack FJ, Ozdemir R, Sui SH, Daskalakis NP, Mavrikaki M. [Ageing-related Transcriptomic Changes with Spatial Resolution in the Human Prefrontal Cortex](#). *bioRxiv [Preprint]*. 2026 Jan 12:2026.01.12.698703. doi: 10.64898/2026.01.12.698703. PMID: 41648412; PMCID: PMC12871360.

Department of Pathology

Publications

- Ghafghazi S, Uhl L, Herbert B, Bertolet M, Alexander JH, Goodman SG, Raval J, Roubille F, Fordyce CB, Goldfarb M, Bainey K, de Andrade PB, Senaratne J, Bracey A, Roswell RO, Lopes R, Simon T, Steg G, Brooks MM, Hebert PC, Carson JL, Triulizi DJ; MINT Trial Investigators. [Transfusion-related adverse events in patients with restrictive or liberal transfusion strategy. An analysis of the MINT trial.](#) *Transfusion.* 2026 Jan;66(1):84-93. doi: 10.1111/trf.70006. Epub 2025 Nov 26. PMID: 41305907; PMCID: PMC12857874.
- Ayub ALP, Tonin BCB, Azevedo H, Jordão PHF, Saxena T, Sejour L, Nsengimana J, Vlachos I, Reis EM, Slack FJ, Jasiulionis MG. [LncRNA Dlx4os drives malignant transformation and phenotype switching in melanoma.](#) *Epigenetics.* 2026 Dec;21(1):2641924. doi: 10.1080/15592294.2026.2641924. Epub 2026 Mar 19. PMID: 41855479; PMCID: PMC13003849.
- De A, Kumar V, Saltzman WM, Slack FJ, Vikram A, Gupta A, Bahal R. [Advances in peptide nucleic acid for targeting RNA and genomic DNA.](#) *Cell Rep Phys Sci.* 2026 Jan 21;7(1):103061. doi: 10.1016/j.xcrp.2025.103061. PMID: 41716301; PMCID: PMC12916000.
- Rai A, Iatrou A, Arzeta IV, Bartlett AL, Banahan J, Desai V, Pantano L, Castanho I, Yeganeh PN, Ploumakis A, Wang S, de Amaral AA, Kalavros N, Nagalakshmi SU, Tsvetkov P, Berretta S, Solomon IH, Hide W, Vlachos IS, Slack FJ, Ozdemir R, Sui SH, Daskalakis NP, Mavrikaki M. [Aging-related Transcriptomic Changes with Spatial Resolution in the Human Prefrontal Cortex.](#) *bioRxiv [Preprint].* 2026 Jan 12:2026.01.12.698703. doi: 10.64898/2026.01.12.698703. PMID: 41648412; PMCID: PMC12871360.
- Mohd ON, Wang L, Sardella BR, Jou D, Wulf GM, Slack FJ, Heng YJ, Doyle PS. [MicroRNA spatial profiling for assessing drug efficacy in BRCA1 -related triple-negative breast tumors.](#) *bioRxiv [Preprint].* 2026 Jan 12:2026.01.12.698824. doi: 10.64898/2026.01.12.698824. PMID: 41648163; PMCID: PMC12871373.
- Savage J, Rai A, Lee JD, Banahan J, Dujic K, Nunez M, Caldarone B, Ghoshal S, Slack FJ, Mavrikaki M. [Age-dependent transcriptomic effects of morphine in the frontal cortex of female mice.](#) *Neuropharmacology.* 2026 Mar 15;286:110809. doi: 10.1016/j.neuropharm.2025.110809. Epub 2025 Dec 16. PMID: 41412512; PMCID: PMC12921680.
- Christofk HR, DeNicola GM, Emerling BM, Engelman JA, Fruman DA, Goncalves MD, Lamia KA, Lyssiotis CA, Manning BD, Shaw RJ, Toker A, Vander Heiden MG, Yaffe MB. [A Legacy of Mentorship: A Tribute to Lewis Cantley.](#) *Cancer Discov.* 2026 Mar 2;16(3):431-438. doi: 10.1158/2159-8290.CD-25-1792. PMID: 41766433.

Department of Pathology

Publications

- Willett JDS, Waqas M, Naumenko S, Mullin K, Hecker J, Bertram L, Lange C, Vlachos I, Hide W, Tanzi RE, Prokopenko D. [Matching heterogeneous cohorts by projected principal components reveals two novel Alzheimer's disease-associated genes in the Hispanic population.](#) *Alzheimers Dement.* 2026 Feb;22(2):e71189. doi: 10.1002/alz.71189. PMID: 41755704; PMCID: PMC12946819.
- Yu M, Zhao Z, Dietzen DJ, Gruson D, Hu J, Killeen AA, Manissero D, Pillay TS. [Global IVD: Barriers, Trends, and Future.](#) *Clin Chem.* 2026 Feb 3;72(2):225-231. doi: 10.1093/clinchem/hvaf184. PMID: 41417459.
- Lee SM, Avalos CL, Miliotis C, Doh HM, Chan E, Kaye KM, Slack FJ. [Host microRNA-31-5p regulates KHDRBS3 expression and modulates viral gene expression during KSHV lytic reactivation.](#) *Cell Rep.* 2026 Apr 1;45(4):117160. doi: 10.1016/j.celrep.2026.117160. Epub ahead of print. PMID: 41931390.
- Leung, S.K., Walker, E.M., Policicchio, S. *et al.* [Methylomic signatures of tau and amyloid-beta in transgenic mouse models of Alzheimer's disease neuropathology.](#) *npj Dement.* **2**, 23 (2026). <https://doi.org/10.1038/s44400-026-00074-y>
- Sheets AR, McNamee SM, Lian CG, Murphy GF. [Dermal Microvascular Responses of Human Induced Pluripotent Stem Cell-Derived Skin Organoids to Inflammation and Injury.](#) *Am J Pathol.* 2026 Feb 2:S0002-9440(26)00030-1. doi: 10.1016/j.ajpath.2026.01.005. Epub ahead of print. PMID: 41638316.
- Hong SG, Murphy GF, Lian CG. [Epigenetics of Malignant Melanoma: Mechanisms, Diagnostic Approaches and Therapeutic Applications.](#) *Oncol Res.* 2026 Mar 23;34(4):4. doi: 10.32604/or.2026.073894. PMID: 41930165; PMCID: PMC13040281.
- Repetto F, Lian CG, Murphy GF. [Clues From Strange New Antigens: How Skin Responds to Nonself.](#) *Lab Invest.* 2026 Jan;106(1):104258. doi: 10.1016/j.labinv.2025.104258. Epub 2025 Nov 11. PMID: 41232834.
- Duncan LM, Murphy GF. [The Twentieth Century Dermatopathologist Who Revolutionized the Discipline.](#) *J Cutan Pathol.* 2026 Jan;53(1):3-4. doi: 10.1111/cup.70004. Epub 2025 Oct 30. PMID: 41168549.
- Fischer GM, Fang R, Xu S, Karkempetzaki AI, Migayron L, Draper E, Wang J, Schatton T, Mandinova A, Murphy GF, Lian CG. [Loss of ten-eleven translocation 2 \(TET2\) facilitates aggressive behaviour in cutaneous melanoma by inducing peroxisome proliferator-activated receptor-γ coactivator 1α expression and oxidative phosphorylation.](#) *Br J Dermatol.* 2026 Jan 6;194(1):111-124. doi: 10.1093/bjd/ljaf378. PMID: 41016027; PMCID: PMC12771344.

Department of Pathology

Publications

- Murphy GF. [Aging Skin: A Dermatitis To Which All Flesh Is Heir?](#) J Cutan Pathol. 2026 Jan;53(1):121-124. doi: 10.1111/cup.14756. Epub 2025 Jan 7. PMID: 39777799.
- Murphy GF. [White Depressed Areas and Tumor Infiltrating Lymphocytes: The Cancer Cure That Lies Within?](#) J Cutan Pathol. 2026 Jan;53(1):81-90. doi: 10.1111/cup.14768. Epub 2025 Jan 7. PMID: 39777741.
- Duncan LM, Tahan SR, Hoang MP, Murphy GF. [Martin C. Mihm, Jr. and Dermatopathology Education at Harvard Medical School.](#) J Cutan Pathol. 2026 Jan;53(1):9-15. doi: 10.1111/cup.14747. Epub 2025 Jan 7. PMID: 39777407.